

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants:	Kemal GULER et al.	§	Confirmation No.:	5813
		§		
Serial No.:	10/726,432	§	Group Art Unit:	3625
		§		
Filed:	12/03/2003	§	Examiner:	J. B. Dunham
		§		
For:	Method And System For	§	Docket No.:	200313474-1
	Predicting The Outcome	§		
	Of An Online Auction	§		

**APPEAL BRIEF**

**Mail Stop Appeal Brief – Patents**

Commissioner for Patents

PO Box 1450

Alexandria, VA 22313-1450

Date: October 24, 2007

Sir:

Appellants hereby submit this Appeal Brief in connection with the above-identified application. A Notice of Appeal is filed concurrently herewith.

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**I. REAL PARTY IN INTEREST**

The real party in interest is the Hewlett-Packard Development Company (HPDC), a Texas Limited Partnership, having its principal place of business in Houston, Texas. HPDC is a wholly owned affiliate of Hewlett-Packard Company (HPC). The Assignment from the inventors to HPDC was recorded on December 3, 2003, at Reel/Frame 014776/0012.

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**II. RELATED APPEALS AND INTERFERENCES**

Appellants are unaware of any related appeals or interferences.

**III. STATUS OF THE CLAIMS**

Originally filed claims: 1-20.  
Claim cancellations: 1-2, 6-7, 12, 14 and 18-19.  
Added claims: 21.  
Presently pending claims: 3-5, 8-11, 13, 15-17, 20 and 21.  
Presently appealed claims: 3-5, 8-11, 13, 15-17, 20 and 21.

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**IV. STATUS OF THE AMENDMENTS**

No claims were amended after the final Office action dated August 13, 2007.

## V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The specification is directed to a method and system for determining feedback rules for an auction.<sup>1</sup> At least some of the illustrative embodiments are methods as defined in claim 3:

3. A method comprising:  
providing information regarding an online auction type to a computer system;<sup>2</sup> and  
predicting, by a software program executing on the computer system, an auction outcome for each of a plurality of potential feedback rules for the online auction type;<sup>3</sup>  
allowing an auction end-user to select a feedback rule to implement from the plurality of potential feedback rules based on the predicted auction outcomes;<sup>4</sup> and  
implementing a single auction using the feedback rule selected by the end-user.<sup>5</sup>

Other embodiments are computer systems as in claim 5:

5. The method as defined in claim 4 wherein modeling the outcome for each of the plurality of potential feedback rules further comprises calculating a statistical distribution of possible outcomes for each of the plurality of potential feedback rules.<sup>6</sup>

Other embodiments are computer systems as in claim 8:

8. A computer system comprising:  
a processor;<sup>7</sup> and  
a non-volatile memory coupled to the processor and storing an auction program;<sup>8</sup>  
wherein the processor executes the auction program stored on the non-volatile memory and wherein the auction

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<sup>1</sup> Specification Title.

<sup>2</sup> Specification Page 3, paragraph [0013], lines 8-12 within the paragraph. A shorthand notation for citations to the specification takes the form ([page], [paragraph], lines [lines within the paragraph]). The citation of this footnote in the shorthand forms reads: (3, [0013], lines 8-12).

<sup>3</sup> (3, [0013], lines 12-20); (5, [0018], lines 1-3); (6, [0019], lines 5-8).

<sup>4</sup> (3, [0013], lines 12-20); (5, [0018], lines 12-15).

<sup>5</sup> (3, [0013], lines 12-20).

<sup>6</sup> (8, [0026], lines 1-7).

<sup>7</sup> (2, [0011], lines 2-4), Figure 1, element 12.

<sup>8</sup> (2, [0011], lines 2-5), Figure 1, elements 14 and 18.

program, prior to implementing an auction of a particular auction type, predicts an auction outcome for each of a plurality of feedback rules for the particular auction type;<sup>9</sup> and  
wherein the processor, executing the auction program, selects one of the plurality of feedback rules to implement based on the predicted auction outcomes.<sup>10</sup>

Yet still other embodiments are computer-readable media as in claim 13:

13. A computer readable media storing instructions executable by a computer system, and when executed the instructions implement a method comprising:
- accepting parameters of an online auction from an auction end-user;<sup>11</sup>
  - modeling, for a particular auction type and for each of a plurality of feedback rules, an auction outcome using, at least in part, the parameters supplied by the auction end-user;<sup>12</sup> and then
  - holding an online auction<sup>13</sup> based on the parameters of the online auction and using one of the plurality of feedback rules selected based on the modeling and selected by the instructions executed by the computer program based on the modeling.<sup>14</sup>

And still other embodiments are computer systems as in claim 20:

20. A computer system comprising:
- a means for<sup>15</sup> reading and executing programs;<sup>16</sup> and
  - a means for<sup>17</sup> storing an auction program coupled to the means for reading and executing;<sup>18</sup>

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<sup>9</sup> (3, [0013], lines 15-18).

<sup>10</sup> (3, [0013], lines 12-15).

<sup>11</sup> (3, [0013], lines 8-12); (5, [0018], lines 1-3); (6, [0019], lines 5-8).

<sup>12</sup> (3, [0013], lines 15-18).

<sup>13</sup> (3, [0013], lines 12-15).

<sup>14</sup> (3, [0013], lines 12-15); (5, [0018], lines 12-15).

<sup>15</sup> This limitation is specifically identified as a means-plus-function limitation under 35 USC §112, sixth paragraph.

<sup>16</sup> (2, [0011], lines 2-4), Figure 1, element 12.

<sup>17</sup> This limitation is specifically identified as a means-plus-function limitation under 35 USC §112, sixth paragraph.

<sup>18</sup> (2, [0011], lines 2-5), Figure 1, elements 14 and 18.



wherein prior to holding an online auction the means for reading and executing programs executes the auction program stored on the means for storing, predicts an auction outcome for each of a plurality of potential feedback rules for an auction of a particular type,<sup>19</sup> and selects one of the plurality of feedback rules to implement based on the predicted auction outcomes.<sup>20</sup>

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<sup>19</sup> (3, [0013], line 15-18).

<sup>20</sup> (3, [0013], lines 12-15); (5, [0018], lines 12-15).

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Whether claims 3-5, 8-11, 13, 15-17 and 20-21 are anticipated under 35 USC § 102(b) by Guler et al. (U.S. Pat. No. Publication No. 20020174052, hereinafter "Guler").

## **VII. ARGUMENT**

### **A. Section 102 Rejections over Guler**

#### **1. Claims 3-4, 8-10, 13 and 20-21**

Claims 3-4, 8-10, 13 and 20-21 stand rejected as allegedly anticipated by Guler. Claim 3 is representative of this grouping of claims. The grouping should not be construed to mean the patentability of any of the claims may be determined in later actions (*e.g.*, actions before a court) based on the groupings. Rather, the presumption of 35 USC § 282 shall apply to each of these claims individually.

Guler is directed to an automated decision support system for designing auctions.<sup>21</sup> In particular, Guler appears to be concerned with assisting selection of an overall auction type taking into consideration factors that are beyond the knowledge of the person selecting the auction type (termed “unknown elements” by Guler).

[T]he automatic decision support system 10 estimates the unknown or unobservable elements of the market structure of the auction by extracting the joint distribution of private information of the bidders (*e.g.*, the probability distribution of bidders' willingness to pay, the probability distribution of the number of potential bidders) from bid data extracted from the historical auction data of similar auctions. In particular, the automatic decision support system 10 estimates the unknown elements of the market structure by (1) expressing unobservable variables in the bidding model in terms of the observable bid data, and (2) applying known statistical density estimation techniques to the expression so as to obtain an estimation of the unknown elements. In doing so, the automatic decision support system 10 enables the user (either a seller or a buyer) of the system 10 to factor the distribution of bidders' private information into his/her decisions regarding the appropriate auction procedure to conduct the auction.<sup>22</sup>

Based on the unknown or unobservable elements, a particular bidding model or auction type (*e.g.*, Dutch auction, English auction, first-price-sealed-bid auction) is

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<sup>21</sup> Guler Title.

<sup>22</sup> Guler Paragraph [0038].

selected or suggested.<sup>23</sup> Guler appears to be concerned only with selecting from disparate bidding models (*e.g.*, Dutch auction, English auction, first-price-sealed-bid auction), not selection of a feedback rule to be used within a particular bidding model.

In the Response to Arguments section, the Office action of August 13, 2007 takes the position that “reserve price is one example of a feedback rule within the selected auction format.”<sup>24</sup> Appellants respectfully traverse. Reserve price is merely the “minimum or maximum acceptable price, depending on whether the auction is a selling auction or a buying auction.”<sup>25</sup> One can select a reserve price, and yet still elect to withhold the reserve price as secret information. Thus, selection of a reserve price does not speak at all to a decision of whether or not to reveal the reserve price to the seller/buyer.

The Office action further takes the position that “elements of market structure of characteristics of the auction are further examples of feedback rules within the selected auction type.”<sup>26</sup> Again Appellants respectfully traverse. As discussed in Guler and quoted above, the market structure comprises unknown or unobservable elements (*e.g.*, the probability distribution of bidder’s willingness to pay, the probability distribution of the number of potential bidders).<sup>27</sup> The elements of market structure are variables the Guler system analyzes to help the user select a particular auction type (*e.g.*, Dutch auction, English auction, first-price-sealed-bid auction), but such unknown or unobservable elements are not themselves feedback rules.

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<sup>23</sup> Guler Paragraph [0041]; Paragraph [0047].

<sup>24</sup> Office action of August 13, 2007, Page 4, first full paragraph.

<sup>25</sup> Guler Paragraph [0007].

<sup>26</sup> Office action of August 13, 2007, Page 4, first full paragraph.

<sup>27</sup> Guler Paragraph [0038].

The Office action further points to Guler's Paragraphs [0031] through [0032] as allegedly providing further examples of feedback rules. For convenience, those two paragraphs are reproduced immediately below.

[0031] Similarly, in an auction run by a seller, the seller also has to decide what the reserve price of the auctioned item should be, what is the best auction format, what entry fees should be charged for participating in the auction, what timing and duration of the auction should be, the quantity of the item to be auctioned, what participation rules should govern the auction, and what information rules should be imposed to the auction, etc. As is known, these decisions affect the revenue or profit generated from the auction.

[0032] In order to achieve the maximum revenue or profit, these decisions must be optimized. In accordance with one embodiment of the present invention, this optimization is done by the automatic decision support system 10. The automatic decision support system 10 provides optimal configuration of auction design parameters and comparative evaluation of any pair of design choices. In other words, the automatic decision support system 10 provides automated auction analysis optimization.<sup>28</sup>

Paragraph [0031] again discusses reserve price, but fails to discuss a decision as to whether to provide the reserve price to the auction participants. Paragraph [0032] discusses optimization, but in view of the remaining portions of Guler the optimization relevant to the claims on appeal is selection of a particular auction type (*e.g.*, Dutch auction, English auction, first-price-sealed-bid auction).

Representative claim 3, by contrast specifically recites, "A method comprising: providing information regarding an online auction type to a computer system; and predicting, by a software program executing on the computer system, an auction outcome for each of a plurality of potential feedback rules for the online auction type." Appellants respectfully submit that Guler does not expressly or inherently teach such a system. Guler appears to teach evaluating particular auction types (*e.g.*, Dutch auction, English auction, first-price-sealed-bid auction) based on unknown or unobservable elements. Appellants acknowledge that each auction types in Guler may have its own feedback rule; however, Guler appears to merely evaluate the auction types, not a plurality of feedback rules for

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<sup>28</sup> Guler Paragraphs [0031] and [0032].

a single auction type. Thus, Guler fails to expressly or inherently teach, “predicting, by a software program executing on the computer system, an auction outcome **for each of a plurality of potential feedback rules for *the* online auction type.**” Appellants further submit that neither selection of a reserve price nor Guler’s unknown information can be reasonably construed to be a feedback rule consistent with Appellants’ specification.

Based on the foregoing, Appellants respectfully request that the rejection of this first grouping be reversed, and the claims set for issue.

## **2. Claims 5, 11 and 15-17**

Claims 5, 11 and 15-17 stand rejected as allegedly anticipated by Guler. Claim 5 is representative of this grouping of claims. The grouping should not be construed to mean the patentability of any of the claims may be determined in later actions (*e.g.*, actions before a court) based on the groupings. Rather, the presumption of 35 USC § 282 shall apply to each of these claims individually.

Representative claim 5 specifically recites, “modeling an outcome for each of the plurality of potential feedback rules [for a particular auction type; and wherein] modeling the outcome for each of the plurality of potential feedback rules further comprises calculating a statistical distribution of possible outcomes for each of the plurality of potential feedback rules.” Appellants respectfully submit that Guler fails to expressly or inherently teach such a method. The Office action of August 13, 2007 relies on Guler’s paragraph [0038], which is reproduced again immediately below for convenience of the discussion.

[T]he automatic decision support system 10 estimates the unknown or unobservable elements of the market structure of the auction by extracting the joint distribution of private information of the bidders (*e.g.*, the probability distribution of bidders’ willingness to pay, the probability distribution of the number of potential bidders) from bid data extracted from the historical auction data of similar auctions. In particular, the automatic decision support system 10 estimates the unknown elements of the market structure by (1) expressing unobservable variables in the bidding model in terms of the observable bid data, and (2) applying known statistical density estimation techniques to the expression so as to obtain an estimation of the unknown elements. In doing so, the automatic decision support system 10 enables the user (either a seller or a buyer) of the

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system 10 to factor the distribution of bidders' private information into his/her decisions regarding the appropriate auction procedure to conduct the auction.<sup>29</sup>

While the cited paragraph does contain the words "probability distribution," the probability distribution is of a bidder's willingness to pay and number of potential buyers. Such distributions do not expressly or inherently teach "calculating a statistical distribution of **possible outcomes** for each of the plurality of potential feedback rules."

Based on the foregoing, Appellants respectfully request that the rejection of this second grouping be reversed, and the claims set for issue.

**B. Conclusion**

For the reasons stated above, Appellants respectfully submit that the Examiner erred in rejecting all pending claims. It is believed that no extensions of time or fees are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required (including fees for net addition of claims) are hereby authorized to be charged to Hewlett-Packard Development Company's Deposit Account No. 08-2025.

Respectfully submitted,

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<sup>29</sup> Guler Paragraph [0038].

**VIII. CLAIMS APPENDIX**

1.-2. (Cancelled).

3. (Previously presented) A method comprising:  
providing information regarding an online auction type to a computer system; and  
predicting, by a software program executing on the computer system, an auction outcome for each of a plurality of potential feedback rules for the online auction type;  
allowing an auction end-user to select a feedback rule to implement from the plurality of potential feedback rules based on the predicted auction outcomes; and  
implementing a single auction using the feedback rule selected by the end-user.

4. (Previously presented) The method as defined in claim 3 wherein predicting further comprises modeling an outcome for each of the plurality of potential feedback rules.

5. (Original) The method as defined in claim 4 wherein modeling the outcome for each of the plurality of potential feedback rules further comprises calculating a statistical distribution of possible outcomes for each of the plurality of potential feedback rules.

6.-7. (Cancelled).



8. (Previously presented) A computer system comprising:  
a processor; and  
a non-volatile memory coupled to the processor and storing an auction program;  
wherein the processor executes the auction program stored on the non-volatile memory and wherein the auction program, prior to implementing an auction of a particular auction type, predicts an auction outcome for each of a plurality of feedback rules for the particular auction type; and  
wherein the processor, executing the auction program, selects one of the plurality of feedback rules to implement based on the predicted auction outcomes.
9. (Previously presented) The computer system as defined in claim 8 wherein the processor, executing the auction program, models a plurality of outcomes for an auction, one each for each of the plurality of feedback rules.
10. (Original) The computer system as defined in claim 9 wherein the processor predicts a final outcome for each of the plurality of feedback rules.
11. (Original) The computer system as defined in claim 9 wherein the processor calculates a statistical distribution of outcomes for each of the plurality of feedback rules.
12. (Cancelled).
13. (Previously presented) A computer readable media storing instructions executable by a computer system, and when executed the instructions implement a method comprising:  
accepting parameters of an online auction from an auction end-user;

modeling, for a particular auction type and for each of a plurality of feedback rules, an auction outcome using, at least in part, the parameters supplied by the auction end-user; and then holding an online auction based on the parameters of the online auction and using one of the plurality of feedback rules selected based on the modeling and selected by the instructions executed by the computer program based on the modeling.

14. (Cancelled).

15. (Previously presented) The computer readable media as defined in claim 13 wherein modeling, for each of the plurality of feedback rules, the auction outcome further comprises calculating a statistical distribution of possible outcomes for each of the plurality of feedback rules.

16. (Previously presented) The computer readable media as defined in claim 15 further comprising, before the holding step:  
providing the statistical distributions of possible outcomes for each of the plurality of feedback rules to the auction end-user.

17. (Previously presented) The computer readable media as defined in claim 16 wherein the providing step further comprises:  
ranking each of the plurality of feedback rules based on statistical distributions of possible outcomes.

18.-19. (Cancelled).

20. (Previously presented) A computer system comprising:  
a means for reading and executing programs; and  
a means for storing an auction program coupled to the means for reading and executing;

wherein prior to holding an online auction the means for reading and executing programs executes the auction program stored on the means for storing, predicts an auction outcome for each of a plurality of potential feedback rules for an auction of a particular type, and selects one of the plurality of feedback rules to implement based on the predicted auction outcomes.

21. (Previously presented) The method as defined in claim 3 wherein the predicting further comprises:

ranking, by the software program, each of the plurality of potential feedback rules based on the predicted outcomes; and  
providing the ranking to the auction end-user.

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**IX. EVIDENCE APPENDIX**

None.

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**X. RELATED PROCEEDINGS APPENDIX**

None.